Name: _____ Date: _____ Period: _____ Algebra II Chapter 1 Review

Part I Complete the open ended. SHOW ALL WORK!!

1. a. Find an order in which the given functions can be stacked so that when the initial input is 10, the output is as large as possible.

Function 1: _____

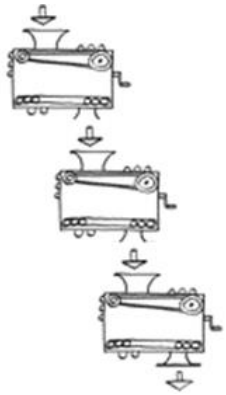
Function 2: _____

Function 3: _____

$f(x) = -5x + 12$

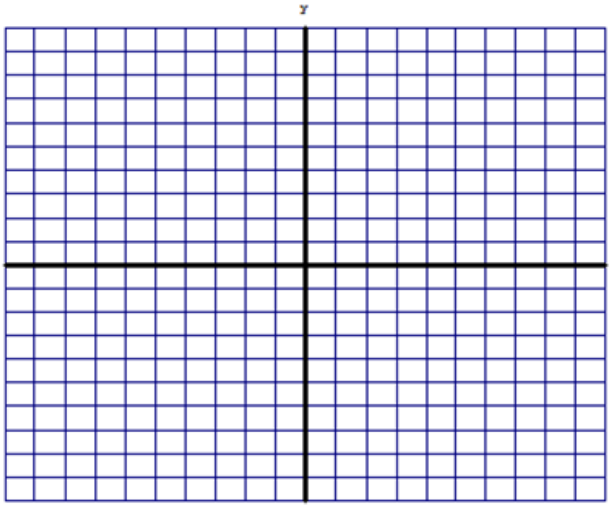
$g(x) = \sqrt{x}$

$h(x) = x^2 - 2x + 3$



b. Justify your arrangement from part (a):

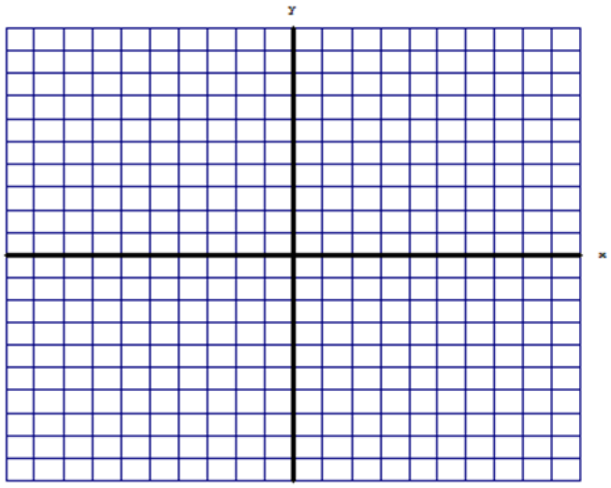
2. Sketch a graph with a domain of $-2 < x \leq 3$ and a range of $-2 \leq y < 5$.



3. **Investigate the function** $f(x)=\dfrac{1}{x+4}$ **completely.**

a. Table

b. Sketch a complete graph (be sure to label important points)



c. Domain: _____; Range: _____

d. Are there any asymptotes? _____ If so, where? Explain.

4. Given $f(x)=(x-4)^2$
Find the value(s) of x for which $f(x)=25$.

x= _____

5. Given $\dfrac{(2x^3y^2z^{-2})(3xy^3z^5)}{(3x^{-2}y^3z)^3}$. Simplify completely. No negative exponents or decimals.

Part 2: Multiple choice. Write the correct letter on the line provided.

_____6. $(3x)^3 =$ __ ?

A. $27x^3$ B. $9x^3$ C. $3x^3$ D. None of these

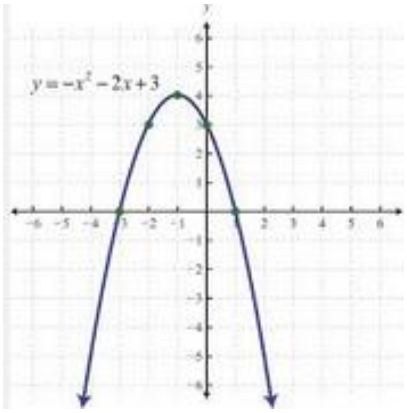
_____ 7. Choose the correct value of $f(-4)$ if $f(x) = x^2 - 3x$.

A. 28 B. 4 C. –4 D. –28

_____ 8. What is the **range** of the function shown in the graph at right?

a. $-\infty < x \leq 4$ b. $-\infty < y \leq 4$

c. $4 \leq x \leq \infty$ d. $4 \leq y \leq \infty$



_____ 9.

Compare the two absolute value expressions and choose the statement below that is true.

Expression 1: $|-33| - |0|$

Expression 2: $|0| - |-33|$

a. Expression 1 is greater than Expression 2.

b. Expression 2 is greater than Expression 1.

c. The expressions are equal.

d. There is not enough information.

Part III: Open ended. SHOW ALL WORK!!!

10.

If $f(x) = -2x^2 + 9x + 5$, calculate the following:

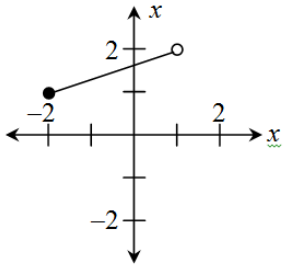
a. $f(3) =$ ____

b. $f(-2) =$ ____

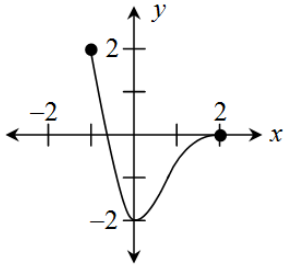
c. What value(s) of x will make $f(x) = 0$?_____
Briefly explain your method of solution.

11. Find the domain and range for each of the following functions.

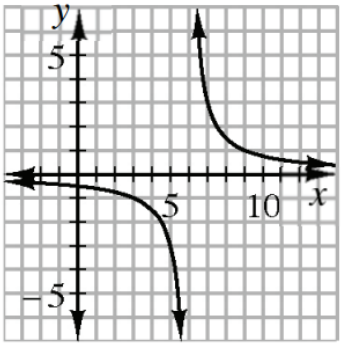
a.



b.



c.



D: _____ D: _____ D:_____

R: _____ R: _____ R: _____

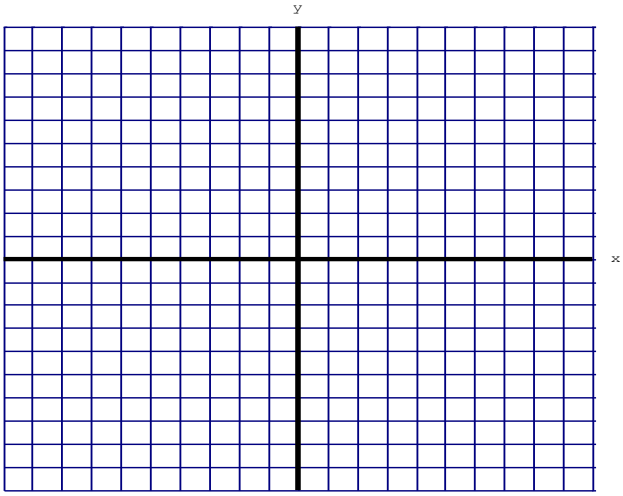
12. a. On one coordinate grid, sketch the graph of the following two equations

$y = x^2 + 3x - 4$

$y = -3x + 3$

b. Where are all the places the two graphs intersect?

c. Explain how you found each point of intersection.



13. Sam got a pet alligator as a birthday present. On his birthday, the alligator was just 32 cm long. He has been watching it closely and has noticed that it has been growing 3 cm each week.
a. Create a table and graph of the function for which inputs are the weeks since Sam's birthday and the outputs are the length of the alligator.

Graph:

b. Write an equation to represent the scenario. _____

c. If the alligator continues to grow at the same rate, when will it be 2 meters (200cm) long? _____

14. Solve the equation $-3 = 5x - 4x^2$. x = _____ or x = _____

15. Solve the equation $42 = 7(x-2)^2$